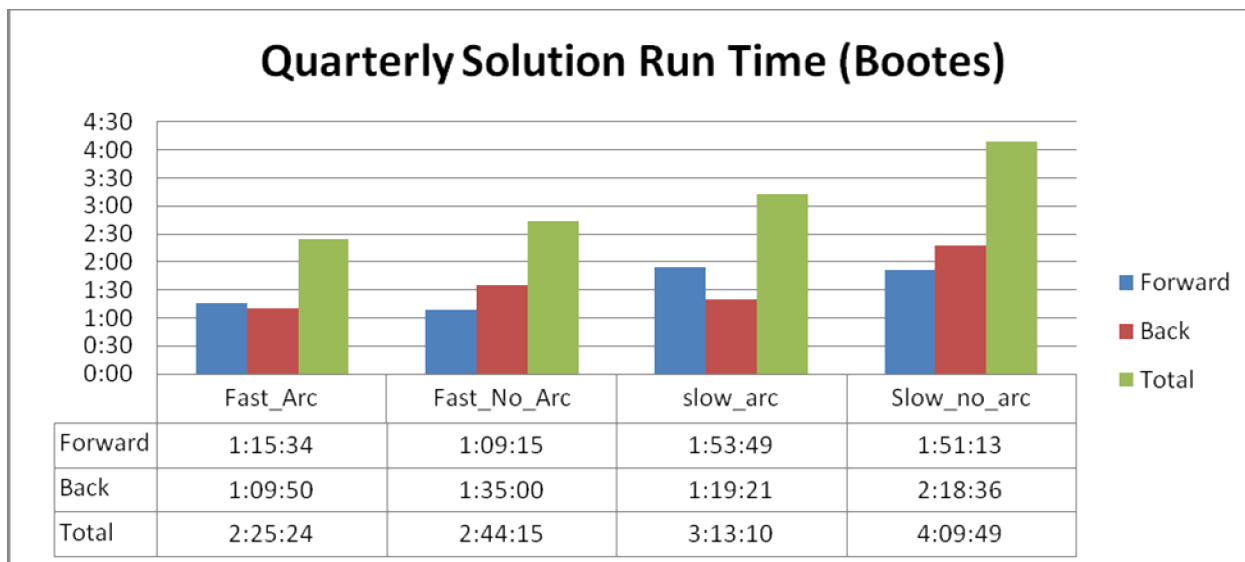


To: Distribution  
 From: John Gipson  
 Re: Solve Timing Tests  
 Date: December 1, 2008

This memo reports on some simple timing tests.

1. All tests were done on bootes when it was unloaded.
2. I started with the control file 2008a.cnt which was used for a quarterly solution.
3. I began with the same arc list used in the original quarterly solution. I ran a standard solution using fast-solve. Fast-solve will reparameterize arcs if there are not enough observations to estimate some parameters. It will also write the names of these arcs to a log file. Fast-solve reparameterized 251 arcs. I produced a new arc-list where these arcs were removed. This revised arc-list was used in the timing tests.
4. I did solutions with and without saving arc-files, and in fast and slow mode. The timing results for the 4 solutions appear below.

	Time (h:mm:ss)			Ratio to Fast_Arc		
	Forward	Back	Total	Forward	Back	Total
Fast_Arc	1:15:34	1:09:50	2:25:24			
Fast_No_Arc	1:09:15	1:35:00	2:44:15	0.92	1.36	1.13
slow_arc	1:53:49	1:19:21	3:13:10	1.51	1.14	1.33
Slow_no_arc	1:51:13	2:18:36	4:09:49	1.47	1.98	1.72



## Conclusions

1. Saving arcfiles helps. In fast mode the solution where arcfiles are not saved runs 19 minutes (13%) longer than a solution where arcfiles are saved.
2. Slow mode is slower than fast mode. This is particularly true in the forward solution which is about 50% slower. In the backward solution (if arcs are saved) the solution is only 14% slower.